

## WHAT IS CLAIMED IS:

1. A router attachment system, comprising:
  - a router including a router housing and a spindle, the spindle adapted to revolve relative to the housing about a vertical axis;
  - a mounting adapter along an end face of the router housing, the mounting adapter including an annular mounting surface;
  - a router attachment adapted to position the router, the router attachment including an attachment housing with an annular attachment surface that mates with the annular mounting surface;
  - wherein the router attachment is rotatable between a release position and an attach position, the router attachment being removable from the mounting adapter in the release position, the router attachment vertically engaging the mounting adapter in opposing directions along the axis in the attach position for vertical retention of the router attachment;
  - a lock locking the router attachment and the mounting adapter in the attach position to prevent relative rotation therebetween, the lock subject to manual actuation to allow rotation between the router attachment and the mounting adapter for detachment of the router attachment from the mounting adapter.
2. The router attachment system of claim 1, wherein the lock comprises corresponding snaps on the attachment and mounting surfaces, the snaps snapping past each other during rotation from the release position to the attach position to hold the router attachment in the attach position.
3. The router attachment system of claim 1, wherein the lock comprises an actuator carried by the attachment housing, the actuator movable between a lock position and an unlock position, the mounting adapter including a stop surface engaging the actuator in the lock position to prevent relative rotation between the router attachment and the mounting adapter, the actuator being manually movable to the unlock position to cause disengagement between the actuator and the stop surface and thereby allow rotation toward the release position.
4. The router attachment system of claim 3, wherein the actuator is movable along a transverse axis relative to the vertical axis, a spring supported by the attachment housing biasing the actuator toward the mounting adapter.

5. The router attachment system of claim 4, further comprising camming means between the mounting adapter and the actuator for automatically moving the actuator toward the unlock position against the bias of the spring in response to relative rotation between the mounting adapter and the router attachment toward the attach position.

6. The router attachment system of claim 4, wherein the actuator is mounted to a bottom side of the attachment housing and includes a pull tab projecting through an opposite top side of the attachment housing.

7. The router attachment system of claim 1, wherein the mounting adapter includes first flanges projecting radially along the annular mounting surface, and wherein the attachment housing includes second flanges projecting radially along the annular attachment surface, the first and second flanges being vertically movable past each other in the release position to permit vertical removal of the router attachment from the mounting adapter, the first and second flanges interlocking with each other when in the attach position to prevent vertical removal.

8. The router attachment system of claim 7, wherein the first flanges lie in a common plane substantially perpendicular to the vertical axis, and wherein the second flanges lie in a common plane substantially perpendicular to the vertical axis, and wherein the first flanges and second flanges are angularly spaced at equidistant angular intervals about the vertical axis.

9. The router attachment system of claim 7, further comprising first and second generally conical surfaces formed into the attachment and mounting surfaces, wherein vertical interference between the first and second generally conical surfaces provide for vertical retention in a first direction along the vertical axis, and wherein interlocking engagement between first and second flanges provides for vertical retention along the vertical axis in a second direction opposite said first direction.

10. The router attachment system of claim 1, wherein the router attachment comprises a generally circular collar portion defining the annular attachment surface, the collar portion centrally receiving the mounting adapter.

11. The router attachment system of claim 1, wherein the mounting adapter includes a generally circular collar portion defining the annular mounting surface, the collar portion centrally receiving the router attachment.

12. The router attachment system of claim 1, wherein the annular mounting surface of the mounting adapter includes an outer radial peripheral mounting surface adapted to mate with a first type of router attachment having collar portion for centrally receiving the mounting adapter, and a central hole adapted to communicate the spindle therethrough, the mounting adapter having an inner radial peripheral mounting surface about the central hole adapted to mate with a second type of router attachment that is received centrally into the central hole.

13. The router attachment system of claim 1, wherein the mounting adapter comprises a mounting plate having a plurality of bolt holes, and a central opening adapted to convey the spindle therethrough, further comprising bolts fastening the mounting plate to the router housing.

14. The router attachment system of claim 1, wherein the mounting adapter is integrally and unitarily formed with the router housing.

15. A router attachment system for a router, the router comprising a router housing and a spindle, the spindle revolving relative to the housing about a vertical axis, the router attachment system comprising:

a mounting adapter plate having a plurality of bolt holes and a central hole adapted for communicating the spindle therethrough when the mounting adapter plate is mounted to the router housing, at least two of the bolt holes matching with corresponding bolt holes in the router housing, wherein the mounting adapter plate is adapted to be fastened to the router housing; and

a router attachment adapted to position the router, the router attachment attaching to and detaching from the mounting adapter plate without bolts, the router attachment vertically engaging and rotationally engaging the mounting adapter plate when attached to the mounting plate adapter to prevent relative movement therebetween.

16. The router attachment system of claim 15, further comprising:

first vertical engagement means between the mounting adapter plate and the router attachment for vertically retaining the router attachment to the mounting adapter along a first direction along the vertical axis;

second vertical engagement first means between the mounting adapter plate and the router attachment for vertically retaining the router attachment to the mounting adapter along a second direction along the vertical axis opposite said first direction; and

first rotational locking means for rotationally locking the router attachment to the mounting adapter plate in the attach position.

17. The router attachment of claim 15 wherein the mounting adapter plate includes an outer radial peripheral mounting surface adapted to mate with a first type of router attachment having collar portion for centrally receiving the mounting adapter plate, and wherein the mounting adapter includes an inner radial peripheral mounting surface defining a central hole that is adapted to mate with a second type of router attachment and that is received into the central hole.

18. The router attachment of claim 15, wherein the mounting adapter plate and the router attachment include corresponding annular mounting and attachment surfaces, respectively, the annular mounting and attachment surfaces adapted to mate with each other wherein the router attachment is rotatable between a release position and an attach position, the router attachment being removable from the mounting adapter plate in the release position, the router attachment vertically engaging the mounting adapter plate in opposing directions along the axis in the attach position for vertical retention of the router attachment.

19. The router attachment system of claim 18, further comprising corresponding snaps on the mounting and attachment surfaces, the snaps snapping past each other during rotation from the release position to the attach position to hold the router attachment in the attach position.

20. The router attachment system of claim 18, further comprising an actuator carried by an attachment housing of the router attachment, the actuator movable between a lock position and an unlock position, the mounting adapter plate including a stop surface engaging the actuator in the lock position to prevent relative rotation between the router attachment and the mounting adapter plate, the actuator being manually movable to the unlock position to cause disengagement between the actuator and the stop surface and thereby allow rotation to the release position.

21. The router attachment system of claim 20, wherein the actuator is movable along a transverse axis relative to the vertical axis, a spring supported by the attachment housing biasing the actuator toward the mounting adapter.

22. The router attachment system of claim 18, wherein the mounting adapter plate includes first flanges projecting radially along the annular mounting surface, and wherein the router attachment includes second flanges projecting radially along the annular attachment surface, the first and second flanges being vertically movable past each other in the release position to permit removal of the router attachment from the mounting adapter plate, the first and second flanges interlocking with each other when in the attach position to prevent removal.

23. The router attachment system of claim 22, wherein the first flanges lie in a common plane substantially perpendicular to the vertical axis, and wherein the second flanges lie in a common plane substantially perpendicular to the vertical axis, and wherein the first flanges and second flanges are angularly spaced at equidistant angular intervals about the vertical axis.

24. The router attachment system of claim 22 further comprising first and second generally conical surfaces between the mounting and attachment surfaces, respectively, wherein vertical interference between the first and second generally conical surfaces provide for vertical retention in a first direction along the vertical axis, and wherein interlocking engagement between first and second flanges provides for vertical retention along the vertical axis in a second direction opposite said first direction.

25. The router attachment system of claim 15, wherein the router attachment comprises a generally circular collar portion centrally receiving the mounting adapter plate.

26. The router attachment system of claim 15, wherein the router attachment is received into the central hole, the router attachment defining a central opening for communicating the spindle therethrough when mounted to the router.

27. A tool attachment for mounting to a mounting adapter along an axis, the mounting adapter including an annular mounting surface a plurality of mounting flanges angularly spaced about the axis, the tool attachment, comprising:

an attachment housing including a generally circular attachment surface sized and configured to mate with the annular mounting surface; and

a plurality of attachment flanges projecting radially from the attachment housing along the attachment surface, the attachment flanges being arranged in a common plane generally perpendicular to the axis and angularly spaced about the axis, a plurality of gaps defined between adjacent pairs of the attachment flanges providing sufficient clearance to receive the mounting flanges through the gaps.

28. The tool attachment of claim 27, further comprising means for rotationally locking the attachment housing to the mounting adapter.

29. The tool attachment system of claim 28, wherein said rotational locking means comprises at least one snap adapted to resiliently engage the mounting adapter.

30. The tool attachment of claim 29 wherein the at least one snap is formed into at least one of the attachment flanges.

31. The tool attachment of claim 32, wherein the at least one snap is formed into a bottom surface of at least one of the attachment flanges.

32. The tool attachment of claim 27, wherein the generally circular attachment surface comprises a generally conical engagement surface for vertically engaging the mounting adapter.

33. The tool attachment of claim 27, wherein the attachment housing comprises plastic material that form the attachment surface and the plurality of attachment flanges.

34. The tool attachment of claim 28, wherein said locking means comprises an actuator carried by the attachment housing, the actuator movable between a lock position and an unlock position, the actuator being movable between the lock and unlock positions transversely relative to the axis, the lock actuator including a stop tab projecting from the attachment surface in the lock position for engaging the mounting adapter.

35. The tool attachment of claim 34, further comprising a spring supported by the attachment housing biasing the actuator toward the attachment surface.

36. The tool attachment of claim 35, further comprising camming means on the actuator for automatically moving the actuator toward the unlock position against the bias of the spring in response to relative rotation between the mounting adapter and the tool attachment toward the attach position.

37. The tool attachment of claim 34, wherein the actuator is mounted to a bottom side of the attachment housing and includes a pull tab projecting through an opposite top side of the attachment housing.

38. The tool attachment of claim 27, wherein the tool attachment comprises a generally circular collar portion defining the attachment surface, the collar portion adapted to centrally receive the mounting adapter.

39. The tool attachment of claim 28, wherein the attachment surface is formed into a radial periphery of the attachment housing with the attachment flanges projecting radially outward, the attachment housing adapted to be inserted into an opening in the mounting adapter.

40. The tool attachment of claim 27, further comprising guide means for engaging a working surface and for guiding movement of a spindle of a router when attached thereto.

41. The tool attachment of claim 40, wherein the guide means comprises an annular bushing projecting downward from a generally planar bottom slide surface.

42. The tool attachment of claim 40, wherein the guide means comprises a rail extending from the attachment housing and a slide selectively movable along the rail, the slide including a guide surface for engaging an edge of the working surface.

43. A method of releasably attaching a tool attachment to a mounting adapter about an axis, the method comprising:

installing the tool attachment onto a mounting adapter along the axis to facilitate engagement in a first direction along the axis between mounting and attachment surfaces of the mounting adapter and the tool attachment, respectively;

facilitating relative rotation about the axis between the mounting adapter and the tool attachment to cause interlocking engagement between corresponding flanges along the

first and second attachment surfaces and thereby provide for retention of the tool attachment to the mounting adapter in a second direction opposition said first direction; and rotationally locking the mounting adapter to the tool attachment.

44. The method of claim 43, wherein the mounting adapter is unitarily formed into a router housing of a router having a vertically rotatable spindle along the axis.

45. The method of claim 43, wherein the mounting adapter is provided by a mounting adapter plate, further comprising bolting the mounting adapter plate onto a router housing of a router having a vertically rotatable spindle along the axis, the spindle extending through the mounting adapter plate.

46. The method of claim 43, wherein said facilitating relative rotation comprising rotating at least one of the mounting adapter and the tool attachment about the axis until corresponding stop surfaces between the mounting adapter and the tool attachment abut.

47. The method of claim 43, wherein said rotational locking comprises resiliently snapping the tool attachment to the mounting adapter.

48. The method of claim 43, wherein said rotational locking comprises driving a spring loaded actuator transversely relative to the axis, the actuator including a stop tab having an advanced position in which the stop tab is positioned to engage the mounting adapter to prevent relative rotation between the mounting adapter and the tool attachment.

49. The method of claim 48, further comprising rotationally unlocking the mounting adapter from the tool attachment by manually retracting the stop tab and facilitating relative rotation about the axis between the mounting adapter and the tool attachment.

50. The method of claim 48, further comprising camming the actuator and thereby retracting the actuator automatically during said relative rotation.

51. The method of claim 43, wherein said installing comprises seating corresponding mating surfaces between the mounting adapter and the tool attachment in a first direction along the axis, passing a plurality of first flanges of the mounting adapter



through corresponding gaps formed between a plurality of second flanges of the tool attachment, and said facilitating rotation comprises interlocking the first and second flanges to retain the tool attachment to the mounting adapter and prevent removal in a second direction opposite said first direction.